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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,471	04/12/2004	Bowie G. Keefer	6454-68359	1626

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT	PAPER NUMBER
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1724

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/823,471

Applicant(s)

KEEFER ET AL.

Examiner

Frank M. Lawrence

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 48-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The term “intermediate valve element” is not used in the specification. Note that the prosecution of this application has been transferred to examiner Frank Lawrence due to a retirement.

Reissue Applications

2. The reissue oath/declaration filed with this application is defective because the error which is relied upon to support the reissue application is not an error upon which a reissue can be based. See 37 CFR 1.175(a)(1) and MPEP § 1414. The error referred to was in previous claim 1. A new declaration is required stating an error in the new claims.

3. Claims 48-73 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1724

5. Claim 51 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 51 recites the limitation "the intermediate valve" in line 1. There is insufficient antecedent basis for this limitation in the claim. To overcome this rejection, the phrase should be changed to "the intermediate valve element".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 48, 49, 51-55 and 59 are rejected under 35 U.S.C. 102(e) as being anticipated by Poschl et al. (5,584,322).

9. Poschl et al. '322 teach a rotary valve for a pressure swing adsorption system, comprising a stator housing (15) having an inner surface face and four flow openings, a rotor (11) having an external face and four fluid port openings connected by fluid passages (35, 37), an intermediate valve element forming a stator (18,19,30) having four flow ports extending between inner and outer faces and in communication with the rotor openings and stator openings, a seal (57) for exerting a sealing force that urges the rotor face towards the stator housing face and promotes sealing between the elements, and a variable speed rotary drive means (R) for driving the rotor,

Art Unit: 1724

wherein the stator housing, rotor, and stator are arranged coaxially so that the rotor rotates relative to the stator, which is fixed to the stator housing (see figures, col. 5, line 24 to col. 6, line 31, col. 10, lines 26-29). The stator housing can be made of metal.

10. Claims 48, 49, 51-56, 59-61 and 63-69 are rejected under 35 U.S.C. 102(b) as being anticipated by Miwa et al. (4,705,627).

11. Miwa et al. '627 teach a rotary valve for a pressure swing adsorption system, comprising a stator housing (41,90) having an inner surface face and at least three flow openings, a rotor disc (40) having an external face and at least four fluid port openings connected by fluid passages, an intermediate valve element plate forming a stator (41 or 42) having several flow ports extending between inner and radial faces and in communication with the rotor openings and stator openings, a spring (91) for exerting a sealing force that urges the rotor face towards the stator housing face and promotes sealing between the elements, a pump (P) and valve (122) to control fluid flow within the flow passages, and a rotary drive means (39) for driving the rotor, wherein the stator housing, rotor, and stator are arranged coaxially so that the rotor rotates relative to the stator, which is fixed to the stator housing (col. 4, lines 3-22, col. 5, lines 45-51, col. 7, lines 13-44). The materials for the rotary valve are chosen to be self-lubricating, such as polymeric materials (col. 3, lines 3-11).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1724

13. Claims 58 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miwa et al. '627 in view of Poschl et al. '322.

14. Miwa et al. '627 disclose all of the limitations of the claims except that the drive means is operable to vary the speed and that the rotor face comprises metal materials. Poschl et al. '322 disclose a rotary valve as described in paragraph 7 above. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a variable speed drive in the device of Miwa et al. '627 in order to provide a means that allows adjustment of the cycle timing. It is submitted that one having ordinary skill in the art would have also known to select materials for the valve elements that promote relative movement while resisting corrosion and wear.

Allowable Subject Matter

15. Claims 50, 57 and 70-73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

16. Applicant's arguments with respect to claim 47 have been considered but are moot in view of the new ground(s) of rejection. All of the outstanding objections and rejections have been overcome and are withdrawn. New prior art rejections are presented to address the new claims.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The reference to Poschl (5,593,480) discloses a rotary valve for an adsorption unit.

Art Unit: 1724

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank M. Lawrence
Primary Examiner
Art Unit 1724

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Frank Lawrence

4-11-07